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## Study of Griva Kasheruka Sharir with Reference to Anatomical Changes in Manyagraha (Cervical Spondylosis) In Professional Drivers.

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**ABSTRACT: Background:** Changing of life style of modern human being has created several disharmonies in his biological system. Advancement of busy, professional and social life, improper sitting posture in offices, continuous work in one posture and overexertion, jerking movements during travelling and sports – all these factors create undue pressure and stress injury to spine and play an important role in producing disease like cervical spondylosis. **Aim:** To study the anatomical changes in Griva Kasheruka in Manyagraha in professional drivers. **Objectives:** To study the anatomical changes in x-ray of Griva Kasheruka (Cervical Vertebrae) in Manyagraha (Cervical Spondylosis) in professional drivers. **Materials:** 30 patients of professionally heavy vehicle drivers with clinical signs and symptoms of Manyagraha were selected. **Methods:** Literature Review, Observational Clinical Study. **Result:** Out of 30 patients, every driver patient having minimum to maximum radiological changes of cervical spine. **Discussion:** Any structural or degenerative deformity included in the musculoskeletal framework of the cervical region can be a potential cause of Manyagraha (Cervical Spondylosis). **Conclusion:** It has found that Professional driving is a most aggravating factor for causing 'Manyagraha'. **Keywords:** Griva kasheruka, Manyagraha, Cervical vertebrae, cervical spondylosis.

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**INTRODUCTION:** *Ayurveda* is the oldest scientific medical system in the world with a record of clinical experience to validate it. However, it is not only a system of medicine in the conventional sense of curing disease but also a way of life that teaches us how to maintain and protect health. It shows us how to cure disease and promotes longevity. The naturalness of taking risk is matched with a natural desire to remain healthy because the first requisite of the happiness is a health. In God's creation, the evolution of man is considered supreme and every other creature is secondary to it. According to Indian tradition, the highest purpose of human life is the fourfold realization *Dharma, Artha, Kama and Moksha*. For the accomplishment of these purposes, health of a person must be maintained. Since the birth, decay and death are always co-existed with the life, the study of abnormal health status and their management has also been studied with the dawn of the human intellect. Today is the era of modernization and fast life. Everybody is busy and living stressful life. Competitive world around us has compelled us to adopt a hectic lifestyle. Changing of life style of modern human being has created several disharmonies in his biological system. Advancement

of busy, professional and social life, improper sitting posture in offices, continuous work in one posture and overexertion, jerking movements during traveling and sports – all these factors create undue pressure and stress injury to the spine and play an important role in producing disease like cervical spondylosis. In *Ayurveda* it is called as *Manyagraha*. Faulty dietetic habits and irregular life style is responsible for early degenerative changes in bodily tissue and play a vital role in the manifestation of such degenerative disorder. In this way, this disease is now becoming a significant threat to the working population.

#### **MATERIALS AND METHODS:**

**Materials:** For presented dissertation 30 patients of professionally heavy vehicle drivers with clinical signs and symptoms of *Manyagraha* (Cervical Spondylosis) were selected. Total 30 patients with clinical signs and symptoms of *Manyagraha* (Cervical Spondylosis) were selected from OPD of Kaychikitsa and Rognidan department, Ayurved Hospital. Individual case papers were prepared containing information regarding Lakshana (signs and symptoms), Hetu and Cervical x-ray details. Collected data was analysed and presented.



**Selection Criteria –**

1. Totally 30 Patients of professionally heavy vehicle driver irrespective of their caste, region, and religion with clinical signs and symptoms of Manyagraha (cervical spondylosis) were selected.
2. Patients were selected between the age group of 30-50 years.
3. Duration of years in profession - patients who has been in the profession for more than 5 years were selected.
4. Gender – Patients of male gender were included.

**Exclusion Criteria -**

Patients with a congenital, traumatic, functional, infective, inflammatory, neoplastic pathology were excluded., Non cooperative patient.

**Methodology:**

Total 30 patients with signs and symptoms of Manyagraha (Cervical spondylosis) were selected according to the selection criteria mentioned above.

**OBSERVATIONS AND RESULT**

**Age Group:** In the present study of *manyagraha* patients, 46.66 % were 30-40yrs age group and 53.33 % were 40-50yrs age group.

**Religion:** In the study of 30 patients, maximum patients were from Hindu religion.

**Socioeconomic Status:**

In the present study of 30 patients of *manyagraha*, maximum patients were from middle class. In the present study of 30 *manyagraha* patients, maximum patients followed a mixed type of diet. In the present sample of *manyagraha* patients, maximum patients were with addiction of Alcohol and smoking.

**Type of vehicle in Profession:**

In the present study of *manyagraha* 76.66% patients were truck drivers and 23.33% patients were bus drivers.

**Ahara Hetu in the Patients:**

In the present study of *manyagraha* the most prominent *ahara hetu* was *viruddhanna sevana* and *rukshanna sevana*. In the present study the most prominent *hetu* were *ratrojarana* (96.66%), *Abhighata* (93.33), *Atipravasa* (90%), *Atiasana* (80%) and *dhatukshaya* (76.66%).

**Manasika hetu :**

In the present study the most prominent *hetu chinta* (90%) was found.

**Distribution of Manyagraha Lakshana in Patients:**



Neck pain (96.66%) and restricted neck movements (90%) were the most prominent *lakshana* found in present study.

### **Radiological findings in Cervical Spondylosis:**

In the present study the highly changes Reduction of disc space and osteophytes formation found in 10-15 yrs and above 15 yrs group. PID changes highly found in above 15 yrs group.

### **Duration of years in Profession:**

The most prominent finding was osteophytes formation (83.33%) and reduction of disc space (76.66%) in this present study.

Out of 30 patients, 2 (6.66%) patients were found having changes in Curvature, 23 (76.66%) patients were found having changes of Reduction of disc space, 25 (83.33%) patients were found having changes of Osteophytes formation, 8 (26.66%) patients were found having changes of PID. This shows that every driver patient having minimum to maximum radiological changes of cervical spine.

### **DISCUSSION:**

Now a days the increasing prevalence of *Manyagraha* (Cervical Spondylosis) in Professional drivers in early age as due to excessive driving is a major cause. If this continued further will lead to disability in proper function

of neck and will vulnerable to injury. Hence by giving attention towards this for creating awareness in professional drivers and in others and also to prevent them from it as a occupational hazard in future evoked us to undertake this present study. The literature available in *Ayurveda* and modern text was reviewed and dissection was done prior to the study. The present study was carried out in the group of 30 patients. Total 30 patients of *Manyagraha* (Cervical Spondylosis) were carefully studied. All these 30 patients of *Manyagraha* (Cervical Spondylosis) were diagnosed on the basis of clinical features complained by the patients as well as examination. The necessary examinations as stated in the criteria of diagnosis were performed. Other routine laboratorial examinations were also performed to exclude the other possible pathology. Thorough discussion of the data obtained in this study will help in drawing further conclusions. The tabulated clinical observations are discussed here.

**Vihara Hetu:Prapidana-** the continuous pressure or hammering on any region due to external factor is *prapidan*. When drivers drive the vehical, continue hammering or pressure from back exerts due to which



*pidana* at neck region (cervical) occurs, that leads to *prapidana* and *aggravates* pain & other symptoms. *Prapidana* *hetu* was found in 70% of patients.

**Abhighata and Aghata** - The continuous *prapidana* causes trauma that is *abhighata* at site which causes pain and restricted neck movements at that site 93.33% patients were found of having *hetu* of *abhighata*. *aghata* means injury, *hetu* was found in 40% of patients.<sup>[9]</sup>

**Ratrojagarana**- During driving staying awake till late night or whole night was seen in 96.66% patients. It increases *ushna* and *ruksha guna* in the body. If regular, causes *vaata prakopa* along with mental and physical imbalance in the body. *Nidra* is *soma gunatmak* and one of the 3 *upasthambas*. Its proper *sevan* is essential to maintain normal functions of life. Night shifts sleep disorders and stress was some of the reasons found related to this *hetu*.

**Dhatukshaya**-*Apathya ahara vihara* *hetu* causes *rasa*, *rakta*, *dushti* affecting *dhatu* nourishment leads to *agnimandya*, and *daurbalya* and *uttarottara dhatukshaya* occurs. 76.66% patients were found having *hetu* of *dhatukshaya*.

**Atishrama**- This was seen in 76.66% patients. *Atishrama* or excess physical

work beyond one's ability causes *dhatu kshaya* and *vaata prakopa*. This *hetu* is common in the Middle and lower socioeconomic class and prominently found in driver people as a over driving associated with labour work. In absence of proper *ahaara*, this *hetu* can cause severe *dhatu kshaya* and *kha vaigunya* of *asthi*, *majja*, *snayu*, *sandhi* etc.

**Ati Aasana**- 43.33% patients presented with this *hetu*. Prolonged sitting has been said to cause *apaana vaayu dushti*. This is because *AtiAasana* increases *guru*, *manda* and *sthira guna* in the body, especially in the *Kati Pradesh* which is involved primarily in the sitting posture. This causes *avarodha* in *gati* of *apaana vayu* leading to its *dushti*. Other *hetu* with respect to *ahaara* add up to the *samprapti* of *aamaand margavarodhaj vaata prakopa*. Prolonged sitting is associated with disuse muscle atrophy of some muscles of the back thereby increasing the job of load bearing on the facet joints and intervertebral discs thereby predisposing them to early degeneration.

**Atipravasa**- 90% patients in this study presented with this *hetu*. *Atipravasa* or Excessive Vehicle Driving not only involves prolonged sitting but sitting in moving vehicles for



long periods causes both *apaana* and *vyaana vayu prakopa* Association of the *Kati pradesha* and *apaana vayu* and that of *snayu, kandara, peshi* with *vyaana vayu* (as it is responsible for causing movements) predisposes the *Manyagraha vyadhi*. Continuous driving leads to *dukkhasana*, whereas on heavy vehicle, it also causes *sharir Kshobha* which is a cause of *Asthivaha srotas dushti* and finally causes *Manyagraha*.

**Vega avarodha-** *Purisha* and *Mutra nishkramana* is the *karma* of *apaana vaayu*. Therefore, their *dhaarana* leads to *apaana vaata prakopa* in *pakvashaya* region; it goes upward direction and causes various disorders. During driving because of continuous sitting work increases *vegavarodha*. These *hetu* were commonly found in drivers and working in government service like ST drivers. In the present study, *Vegaavarodha* was seen in 63.33% patients.

**Atisahasa-** Over driving or shift in duty is against the capacity of body which causes *kshaya* of *bala*, causes *vaata prakopa*. And *nanatmaja vata vyadhi*. *Atisahasa hetu* was found in 43.33% of patients.

**Dukhashayyasana-** 53.33% patients showed this *hetu* in the present study. Abnormal posture for prolonged

periods often leads to intra muscular in-coordination and muscle imbalance. This is associated with muscle fatigue syndromes, causing muscular pain.

**Condition of vehicle** - In profession of drivers there were daily or for few days driving with exchange of vehicle, so the condition of vehicles were varying according to vehicles. 90% drivers were having such condition. The symptoms of *manyagraha* were increased in nature in drivers whose vehicles condition was poor.

**Condition of driving ways-** driving ways were also varring in nature. Mostly the highways were smooth to drive, but the rural ways were out of order to drive. This factor was also responsible for increasing the disease.

**Manasika Hetu:**

**Chinta, Krodha-** *Ati Cinta* was the biggest *hetu* seen amongst all *hetu* and was found in 90% patients. It has become a major problem behind many disorders today. It is not only responsible for causing Back Pain but also results in increasing disability, without any major radiological evidence. *Ati Chinta* causes *rasavaha srotas dushti* as well as *vyaana vaayu dushti* leading to improper circulation of *Rasa dhatu* and *dhatu kshaya*. *Ati Krodha* or excessive anger was found in 40% patients. *Krodha* increases *ushna*



and *chala guna* in the body causing *pitta vruddhi*. This *pitta vruddhi* causes *Rasa, Rakta dushti* affecting *dhatu* nourishment. *Krodha* has also been mentioned as an *anagni sweda prakaar*. Therefore, *Ati Krodha* is like *Ati Swedana*, which in excessive form can cause *Dhatu Paaka* and *kshaya*. *Chinta and krodha* have also been told factors causing disturbed digestion of food and *aama* by *Charakacharya*. Stress as a causative factor has been associated with endless disorders.

*Charakacharya* has mentioned this state of today's man thousands of years ago. *Gramya ahaara* and *vihaara* has rendered today's man incapable of handling stress ultimately decreasing his capacity to face mental and physical hardships. Stress not only causes Back Pain but also aggravates the same, leading to further fear of serious pathology in the spine. **Shoka, Bhaya-** *shoka* and *bhaya* causes *kshaya* in body ultimately increases *vaata dosha*, leads to *vaatavyadhi*.

**Discussion on Lakshan-** Out of the 30 patients, *Manyashoola* (Neck pain) was found in maximum patients 96.66%, *Sakashta Aakunchana prasarana* (Restricted neck movements) in 90%, *Ansashoola* (Shoulder pain) in 76.66%,

*Shirahshoola* (Occipital headache) in 46.66%, *Hasta chimchimayana evam Alpakarmahani* (numbness and weakness in hand) in 73.33% *Bhrama* (Vertigo) in 60% patients. As the objective was to only identify these variations, a definite conclusion with respect to their structural significance cannot be made. A further study with large sample size may help to demarcate the structural relevance with a specific *Lakshana*. The above discussion suggests that –

1. Any structural or degenerative deformity included in the musculoskeletal framework of the cervical region can be a potential cause of *Manyagraha* (Cervical Spondylosis). The intensity or severity of it will depend not only on the pathology of the same but also concurrent effect of it on the other structures as well.

2. Degree of deformity, number of levels affected, individual pain generating capacity, individual strain threshold is some of the factors with respect to structural damage, which can decide the presentation of *Manyagraha*.

3. Age, Profession, duration of profession, *Ahara, Vihara*, Individual nutrition and body built (*Prakruti*) and Mental Status (*satva*) can have a major effect on the presentation of



*Manyagraha* thereby making the clinical picture quite different than the radiological one. Patients with minimal changes can present with greater complaints as compared to patients with greater structural damage.

### CONCLUSION:

Our study was a hospital based observational study where in 30 x-rays of radiological finding of cervical spondylosis of Professionally Driver patients were assessed for anatomical changes occurred in cervical spine. The following conclusions were drawn from present study. *Asthi Sandhi* is one of the components of *Madhyama-Rogamarga*. The diseases that occur in *Madhyama -Rogamarga* are said to be *Yapya*. So, the *manyagraha* disease occurring in *Griva kasherukasthi sandhi* are *Yapya*. Same as in cervical spondylosis once the degenerative changes occurred then it cannot be cure or regenerate but with proper prevention can be prevent further degeneration as possible as.<sup>[10]</sup> In *Manyagraha* disease of *griva kasheruka* (cervical spine), anatomical changes start from C<sub>1</sub> to C<sub>7</sub> vertebrae mostly changes found in C<sub>4</sub> to C<sub>7</sub> vertebrae and then further involves the whole vertebrae leads to degenerative changes in cervical vertebrae. Musculoskeletal disability and

Locomotory disability increase with the progression of disease.

5) Complain of neck pain should not be neglected as early investigation may be helpful in preventing progression of disease.

6) Along with modern anatomy, *Manya sharir* needs to be understood in *Ayurvedic* point of view in order to diagnose and treat '*Manyagraha*' effectively through *Ayurvedic* Principles.

7) Though *Manyagraha* is only mentioned as a symptom and not a disease in *Ayurveda*, it can be taken under *vaatvyadhi*, and hence *hetu, chikitsa* and *pathyapathya* described for *vaatavyadhi* can also be applied to '*Manyagraha*' as the main causative factor for it is aggravated *vaata*.<sup>[11]</sup>

8) We have found that Professional driving is a most aggravating factor for causing '*Manyagraha*' because continuous and excessive driving causes progressively degenerative changes even in a early age and because of ignorance if not treated early develops cronicity leads to getting complications related to *Manyagraha* as a *vaatavyadhi*.

9) Also, it has found that condition of vehicle, condition of ways for driving matters for causing and increasing the disease. To prevent this, the vehicle and



ways should check regularly, avoid shortcut ways for minimizing the distance and that should be include in transport rules, by this social awareness could be done.

10) Thus, finally it is concluded that there are significant and considerable anatomical changes found in *Griva Kasheruka* i.e vertebrae located in cervical region in *Manyagraha* (Cervical Spondylosis) Especially in Professional Drivers.

11) *Apathya Ahaara vihaara* are also leading to early degenerative changes in the cervical spine thereby predisposing large number of people to '*Manyagraha*'. Correction of these *hetu* will improve outcome of '*Manyagraha*' treatment.

12) From detail study of literature, we can say that *hetu* responsible for '*Manyagraha*' in professional drivers can be correlated with causes of Cervical spondylosis like *Atipravasa*-excessive Travelling, *Atichinta*-stress, *Atichankramana*-excessive driving, *Atibharvahan*-excessive physical work, *Atiasana*-continuous sitting, *Dukhasana*-bad work practices, etc. So by correcting these *hetu* we can help to prevent '*Manyagraha*'.<sup>[12]</sup>

13) Curvature, Reduction of disc space, Osteophytes formation, Prolapsed Intervertebral Disc was main factors

associated with *Manyagraha* in the present study sample of patients.

14) Taking into consideration the great anatomical importance of cervical vertebrae in the vertebral column, it can be concluded that if proper regimen for Professional drivers suggested by *Ayurveda* like *Ahar*, *Vihar*, *Vyayam*, *Yoga* etc. Are followed at optimum level, '*Manyagraha*' can be successfully prevented and cured.<sup>[11]</sup>

15) A more controlled and standardized study of *Griva kasheruka* in Patients of *Manyagraha* with larger sample size is required in order to study the Anatomical changes in Professional Drivers.

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